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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,851	01/23/2001	Kenichi Sanpei	450100-02949	3091

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FROMMER LAWRENCE & HAUG
745 FIFTH AVENUE- 10TH FL.
NEW YORK, NY 10151

EXAMINER	
MISLEH, JUSTIN P	

ART UNIT	PAPER NUMBER
2622	

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/768,851	SANPEI, KENICHI	
	Examiner	Art Unit	
	Justin P. Misleh	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 7-10-06.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1 - 20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1 - 20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed July 10, 2006 have been fully considered but they are not persuasive.

2. Applicant argues, "that the positions of the boundary lines B1 and B2 begin left up to the user, or performed automatically by the apparatus, in accordance wit the imaging mode, by detecting or calculating the amount of processing time required for normal image and for high-speed image is completely different from switching from the high speed clock to a normal vertical clock based on output signals which pertain to a quantity of rows that are read and thus setting a value in view of the quantity of rows" (see Response, page 12).

3. The Examiner respectfully disagrees with Applicant's position. In the Office Action, the Examiner made the following statement: "While the particulars of the sensor timing circuit (28) or the control interface (52) are not disclosed, in order for Parulski et al. to achieve successful read-out of the central focusing area (66) according to figures 10 – 12, either the sensor timing circuit (28) or the control interface (52) must inherently have a pulse counter circuit for receiving instructions from the control means (35) pertaining to a quantity of rows that are read, setting a value in response to the quantity of rows, and checking to see when the quantity of rows equals a predetermined value" (see Office Action mailed April 12, 2006; Page 4). Applicant has not specifically addressed or traversed this assertion – apparently, Applicant's implicitly acknowledges Parulski must provide some sort of pulse or row counting circuit that measures the

amount of rows read versus a predetermined number of rows to be read (e.g., rows in the central detection area 66).

4. Therefore, it appears that Applicant strictly believes Miyahara fails to teach anything about switching from a high-speed clock to a normal vertical clock based upon a number of rows. Again, the Examiner respectfully disagrees with Applicant's position. Miyahara explicitly teaches, "when the high-speed imaging mode is selected, the effective image area 12 is divide into a high-speed transmission area 17 and a normal transmission area 18 by changing with respect to the circuit thereof, by means of a TG (not shown in the drawing) that is provided in the controller 9, the way how to read electric charges in the solid-state imaging section 11" (emphasis added; see column 4, lines 61 – 65). Furthermore, Miyahara teaches, "the effective image area 12 in this embodiment has two virtual boundaries B1 and B2 formed in it by making a change in the method of reading out the electrical charges from the photoelectric conversion elements during one field" (emphasis added, see column 5, lines 1 – 4).

5. Essentially, without being explicitly indicated as such, the TG component in Miyahara is nothing more than a timing pulse generator, which is a necessary component in every CCD image sensor. Clearly, Miyahara teaches switching between a high-speed clock and a normal vertical clock based upon certain row divisions in the sensor.

6. Finally, the Examiner notes the claim language requires, *inter alia*, "instructions ... pertaining to a quantity of rows ... and setting a value in response to the quantity of rows ... when the quantity of rows equals a predetermined value ... control a switching." This limitation is written broadly enough such that the instructions *pertaining* to a quantity or rows does not actually have to be the quantity of rows; rather instructions issued related to timing or exposure

or the CCD are instructions *pertaining* to a quantity of rows especially when various timings are required for field read-out. Hence, in the case of Miyahara, the establishment of the positions of the boundary lines B1 and B2 can be performed automatically by detecting or calculating the amount of processing time required for normal imaging and for high-speed imaging (see column 6, lines 17 – 20). Thus, based upon the analysis above, Miyahara at least provides instructions *pertaining* to a quantity of rows, wherein "the quantity of rows" essentially refers to the timing/exposure control stated above.

7. For at least these reasons, the rejections of Claims 1, 6, 11, and 16 will be maintained.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. **Claims 1 – 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Parulski et al. in view of Miyahara.

10. For **Claims 1 and 6**, Parulski et al. disclose, as shown in figures 1, 4, 5, 8, and 9 and as stated in columns 4 (lines 49 – 59), 5 (lines 54 – 67), 6 (lines 1 – 14, 19 – 22, and 26 – 33), 8 (lines 6 – 67), and 9 (lines 1 – 8), an image photographing apparatus and method of operating thereof for photographing a still image, comprising:

a scanning imaging device (sensor 20; see figure 4) for generating image signals; and

a control means (processor section 35; see figure 1) for using the image signals generated by said imaging device (sensor 20) to adjust the still image during at least one control period before photographing (As shown in figure 9, adjustment of focus is performed before photographing during at least one control period), said control means (processor section 35) defining a single detection area (central focusing area 66) which is both vertically and horizontally limited within said imaging device (sensor 20) and reading only the image signals within the single detection area (central focusing area 66) out of said imaging device (sensor 20), the read image signals being used to adjust the still image before photographing and a control period of said control means being set in correspondence within a read-out period associated with said single detection area (see explanation below);

As shown in figure 4, "only a small number lines in the central focusing area 66 of the image are used to provide the focus determination input data." As shown in figure 5, "the average contrast could be computed for a center region 80, a left central region 82, and the right central region 84." In figure 4, the detection area is vertically limited to a small number of lines and horizontally limited by the pixel plane (as in Applicant's figure 4) and further, in figure 5, the detection area is vertically limited to a small number of lines and horizontally limited to central regions.

On column 8 (line 39) – column 9 (line 9), Parulski et al. indicates that the AF mode lasts for an indefinite period of time and after that indefinite period of time a final image is then integrated. More specifically, Parulski et al. states, "the process of integrating and reading out the focus image is then repeated – numerous times as the lens focus is adjusted until it provides the maximum average contrast – the focus is acceptable." Therefore, the control means cannot

integrate the final image until the focus is acceptable – i.e. the control means control period switchover (from AF period to still image capture period) is determined by the read-out period of the detection area.

Finally, Parulski et al. indicate that the central focusing area (66) is read-out according to the line-skipping patterns of figures 10 and 11. Parulski et al. further indicate that to read-out in such a pattern, the sensor timing circuit (28) operates according the timing diagram shown in figure 12. Parulski et al., also state in column 8 (lines 1 – 5), "the advantage ... [is] to reduce the amount of data that must be handled from the central focusing area 66". While the particulars of the sensor timing circuit (28) or the control interface (52) are not disclosed, in order for Parulski et al. to achieve successful read-out of the central focusing area (66) according to figures 10 – 12, either the sensor timing circuit (28) or the control interface (52) must inherently have a pulse counter circuit for receiving instructions from the control means (35) pertaining to a quantity of rows that are read, setting a value in response to the quantity of rows, and checking to see when the quantity of rows equals a predetermined value.

However, Parulski et al. do not specifically disclose reading a quantity of rows using a high-speed clock, determining when said quantity of rows have been read, and when said quantity of rows have been read switching the high-speed clock to a normal vertical clock.

On the other hand, Miyahara also discloses an image photographing apparatus for specialized reading of the imaging device. Miyahara specifically teach, as shown in figures 3 and 5, an imaging device (11) having a imaging area (17 – 19) comprised of an upper and lower high-speed transmission area (17 and 19) and a central normal transmission area (18). Furthermore, Miyahara teach, as stated in columns 4 (lines 61 – 67), 5 (lines 1 – 20), and 6 (lines

1 – 20), reading a quantity of rows (17) using a high-speed clock, determining when said quantity of rows have been read (@ B1), and when said quantity of rows (17) have been read switching the high-speed clock to a normal vertical clock (in area 18).

As stated in column 1 (lines 45 – 67) of Miyahara, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have included reading a quantity of rows using a high-speed clock, determining when said quantity of rows have been read, and when said quantity of rows have been read switching the high-speed clock to a normal vertical clock (as taught by Miyahara), in the image photographing apparatus (disclosed by Parulski et al.), for the advantage adding high-speed imaging capability while maintaining the efficiency of charge transmission.

11. For **Claims 11 and 16**, Parulski et al. disclose, as shown in figures 1, 4, 5, 8, and 9 and as stated in columns 4 (lines 49 – 59), 5 (lines 54 – 67), 6 (lines 1 – 14, 19 – 22, and 26 – 33), 8 (lines 6 – 67), and 9 (lines 1 – 8), an image photographing apparatus and method of operating thereof for photographing a still image, comprising:

a scanning imaging device (sensor 20; see figure 4) for generating image signals; and

a control means (processor section 35; see figure 1) for using the image signals generated by said imaging device (sensor 20) to adjust the still image during at least one control period before photographing (As shown in figure 9, adjustment of focus is performed before photographing and during at least one control period), said control means (processor section 35) defining a single detection area (central focusing area 66) within said imaging device (sensor 20) and reading only the image signals within the single detection area (central focusing area 66) out

of said imaging device (sensor 20), the read image signals being used to adjust the still image before photographing (see explanation below);

As shown in figure 4, "only a small number lines in the central focusing area 66 of the image are used to provide the focus determination input data." As shown in figure 5, "the average contrast could be computed for a center region 80, a left central region 82, and the right central region 84." In figure 4, the detection area is vertically limited to a small number of lines and horizontally limited by the pixel plane (as in Applicant's figure 4) and further, in figure 5, the detection area is vertically limited to a small number of lines and horizontally limited to central regions.

On column 8 (line 39) – column 9 (line 9), Parulski et al. indicates that the AF mode lasts for an indefinite period of time and after that indefinite period of time a final image is then integrated. More specifically, Parulski et al. states, "the process of integrating and reading out the focus image is then repeated – numerous times as the lens focus is adjusted until it provides the maximum average contrast – the focus is acceptable." Therefore, the control means cannot integrate the final image until the focus is acceptable – i.e. the control means control period switchover (from AF period to still image capture period) is determined by the read-out period of the detection area.

Finally, Parulski et al. indicate that the central focusing area (66) is read-out according to the line-skipping patterns of figures 10 and 11. Parulski et al. further indicate that to read-out in such a pattern, the sensor timing circuit (28) operates according the timing diagram shown in figure 12. Parulski et al., also state in column 8 (lines 1 – 5), "the advantage ... [is] to reduce the amount of data that must be handled from the central focusing area 66". While the particulars of

the sensor timing circuit (28) or the control interface (52) are not disclosed, in order for Parulski et al. to achieve successful read-out of the central focusing area (66) according to figures 10 – 12, either the sensor timing circuit (28) or the control interface (52) must inherently have a pulse counter circuit for receiving instructions from the control means (35) pertaining to a quantity of rows that are read, setting a value in response to the quantity of rows, and checking to see when the quantity of rows equals a predetermined value.

However, Parulski et al. do not specifically disclose reading a quantity of rows using a high-speed clock, determining when said quantity of rows have been read, and when said quantity of rows have been read switching the high-speed clock to a normal vertical clock.

On the other hand, Miyahara also discloses an image photographing apparatus for specialized reading of the imaging device. Miyahara specifically teach, as shown in figures 3 and 5, an imaging device (11) having a imaging area (17 – 19) comprised of an upper and lower high-speed transmission area (17 and 19) and a central normal transmission area (18). Furthermore, Miyahara teach, as stated in columns 4 (lines 61 – 67), 5 (lines 1 – 20), and 6 (lines 1 – 20), reading a quantity of rows (17) using a high-speed clock, determining when said quantity of rows have been read (@ B1), and when said quantity of rows (17) have been read switching the high-speed clock to a normal vertical clock (in area 18). Therefore, Miyahara also teach wherein the control means controls at least two scan speeds with a first scan speed being used outside the single detection area (17 and 19) and a second scan speed being used with the single detection area (18), the first scan speed being greater than the second scan speed.

As stated in column 1 (lines 45 – 67) of Miyahara, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have included reading a quantity

of rows using a high-speed clock, determining when said quantity of rows have been read, and when said quantity of rows have been read switching the high-speed clock to a normal vertical clock (as taught by Miyahara), in the image photographing apparatus (disclosed by Parulski et al.), for the advantage adding high-speed imaging capability while maintaining the efficiency of charge transmission.

12. As for **Claims 2, 7, 12, and 17**, Parulski et al. disclose wherein said control means (processor section 35) also controls said imaging device (sensor 20) when the still image is being photographed.

Parulski et al. states, in column 4 (lines 28 – 39), "The output of the image sensor 20 is amplified and processed in an analog gain and sampling (correlated double sampling (CDS)) circuit 32, and converted to digital form in A/D converter 34. The A/D output signal is provided to a processor section 35, which includes a digital processor 36 which temporarily stores the still images in a DRAM memory 38. The digital processor 36 then perform image processing on the still images, and finally stores the processed images on the removable memory card 26 via a memory card interface circuit 40, which may use the PCMCIA 2.0 standard interface. An EPROM memory 42 is used to store the firmware which operates the digital processor 36."

13. As for **Claims 3, 8, 13, and 18**, Parulski et al. disclose wherein said control means (processor section 35) determines a start position of the single detection area (central focus area 66) and the amount of image to be read out within the single detection area, and, accordingly, only the image signals within the single detection area (central focus area 66) are read out of the said imaging device (sensor 20).

Parulski et al. states, in column 4 (lines 22 – 28), "Control of the sensor 20 is provided by a timing and control section 27, which specifically includes a sensor timing circuit 28. The sensor timing circuit 28 provides the signals to enable sensor drivers 30, which provides horizontal clocks (H1, H2) and vertical clocks (V1, V2), as well as a signal FDG for activating a drain structure on the sensor 20."

Furthermore, Parulski et al. states, in column 6 (lines 26 – 34), "In the autofocus mode, the timing and control section 27 controls the fast dump structure 62 to A) eliminate all lines of image charge in the outer area 68 (FIG. 4) outside the central focusing area 66, and B) eliminate at least one line of image charge from the image sensor 20 for every one or more lines of image charge that are transferred to the horizontal register 60 for readout from the central focusing area 66."

14. As for **Claims 4, 9, 14, and 19**, Parulski et al. disclose wherein said control means (processor section 35) allows a high-speed scan in a region (outer areas 68) before the start position of the single detection area (central focus area 66), allows a predetermined-speed scan in the single detection area, and allows only the determined amount of image signals to be read out.

Parulski et al. states, in column 4 (lines 54 – 66), "FIG. 4 shows a representative portion of the image sensor 20 which provides the data used to focus the image in the focusing operating mode. Only a small number of lines in a central focusing area 66 of the image are used to provide the focus determination input data. For the progressive scan sensor, the other lines in the outer area 68 are quickly read from the image by continuously holding the fast dump structure 62 at a high positive potential, as the vertical clocks are cycled high and low to transfer lines of charge to the substrate via the fast dump drain. Since the image charge for the non-used lines are

quickly flushed from the sensor, this operation is referred to as a 'fast flush' and the focus mode is thus described as a fast flush focus mode."

15. As for **Claims 5, 10, 15, and 20**, Parulski et al. disclose wherein, based on the read image signals, at least one of automatic focus control, automatic photographic sensitivity control, and automatic white balance control is performed.

Parulski et al. performs automatic focus control on the read image signals.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

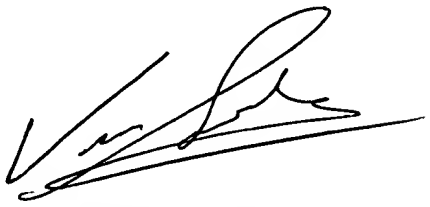
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

17. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 571.272.7313. The Examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Vivek Srivastava can be reached on 571.272.7304. The fax phone number for the organization where this application or proceeding is assigned is 571.273.3000.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
September 13, 2006



VIVEK SRIVASTAVA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600